



Conservative Management of Cementoblastoma with Surgical Endodontic Therapy in a Cariously Exposed Mandibular First Molar – A Case Report

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ABSTRACT:

Aim and Background: A benign neoplasm of ecto-mesenchymal origin, cementoblastoma is typified by the growth of cementum-like tissue that attaches to the tooth root. Numerous treatment modalities have been documented in the literature, with surgical enucleation of the lesion in conjunction with connected tooth extraction being the most frequently employed.

Case Description: This article details the conservative treatment that was administered to a 46-year-old woman who had benign cementoblastoma connected to her mandibular right first molar. The tooth had root canal therapy, and thirty days later, it underwent enucleation, curettage, apicoectomy, and guided tissue regeneration (GTR).

Conclusion: Following 18 months of observation, there were no longer any symptoms or indicators, and tooth 46 was visible on radiography.

Significance: Conservative management of a tooth associated with cementoblastoma may be a plausible alternative to extraction.

1. Introduction

Cementoblastoma (True Cementoma) is a benign neoplasm of cementoblasts and represents less than 1% of all odontogenic tumors. It forms a large mass of cementum or cementum-like tissue on the tooth root, which is quite distinctive but relatively uncommon. [1,2] Extraction of the tooth with the tumor has been suggested as the most plausible therapeutic approach due to its higher rates of recurrence. [3-5] Endodontic treatment of the affected tooth associated with apicoectomy during removal of the lesion is cited as an alternative, allowing the tooth to maintain in function.[5] Therefore, the present report aims to describe a case of cementoblastoma treated conservatively, without any evidence of recurrence after 18 months of follow-up.

2. Case Report

A 46-year-old female patient reported to the Department of Conservative Dentistry & Endodontics with a chief complaint of spontaneous pain in the lower right back teeth region for one month. An intra-oral examination

revealed a deep carious lesion on the occlusal surface of tooth #46. Pulp sensibility tests yielded a delayed response. Pre-operative radiograph revealed an occlusal carious lesion encroaching the pulp with a well-defined dense radiopaque mass attached to the mesial and distal roots (Fig.1a). At this point, the differential diagnosis made was hypercementosis, cementoma (true cementoblastoma) & condensing osteitis. For further diagnosis, a Cone beam computed tomography (CBCT) scan was carried out for better evaluation of the extension of the lesion and anatomical relationship with the adjacent teeth and the mandibular nerve, which also suggested that the radiopaque mass was continuous with apical dentin of #46 with the absence of erosion of both the lingual and buccal cortices (Fig.1b(i&ii)).

Based on the clinical and radiographic findings, a final diagnosis suggestive of symptomatic irreversible pulpitis with cementum lesion was made and it was decided to carry out endodontic therapy of the tooth as the patient was not keen to lose the tooth. Informed



consent was obtained and endodontic therapy was planned, followed by surgical endodontic treatment. Endodontic therapy was carried out and a metal-ceramic crown was placed as a post-endodontic restoration (Fig.1c). The patient was then scheduled for surgical excision of the lesion after a month. After obtaining adequate anesthesia, a full-thickness mucoperiosteal flap was raised by placing a vestibular incision (at 45° angle to the body of the mandible) 5 mm away from attached gingiva on buccal mucosa in the vestibule, distal to #45 and mesial to #47 region to prevent a gingival recession as a crown was already placed. Consequently, the buccal bony window was prepared and the lesion was completely excised along with the apical third of the affected roots of #46 (Fig.1d&1e), followed by a thorough surgical curettage. To perform the guided tissue regeneration technique (GTR), the bone defect was filled with a mixture of hydroxyapatite bone graft

(G-Bone, Surgiwear Limited, India) and Platelet-rich fibrin (PRF) following the protocol of Choukroun *et al.* [6] and finally covered with collagen membrane (Heliguide, Advanced Biotech Products Ltd., India) to hasten bone regeneration (Fig.1f). The post-surgical specimen was immediately immersed in a 10% buffered formalin solution & sent for histopathological examination (Fig.1g) and an immediate post-surgical radiograph was taken (Fig.1h). The clinical, radiographic, and histopathological findings, indicated cementoblastoma to be the definitive diagnosis. Post-surgical follow-up visits were scheduled after one week, 1, 6, 12, and 18 months. Clinically patient was reported to be asymptomatic and evidence of bony healing with no recurrence of the lesion was observed in the 18 months post-operative radiographic and CBCT evaluation (Fig.1i(ii) & 1j).

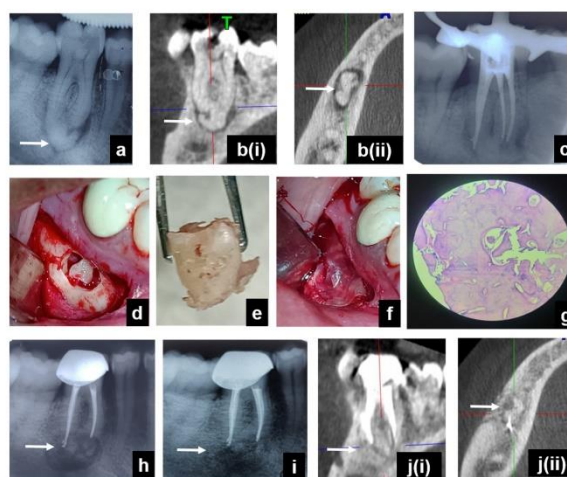


Figure 1: Conservative management of Cementoblastoma: (a) pre-operative radiograph, (b) pre-operative CBCT scan (i) coronal section, (ii) axial section, (d) post-obturation radiograph, (e) surgical exploration, (f) resected lesion with affected roots, (g) placement of bone graft mixed with PRF covered with collagen membrane in the bony socket, (h) Histopathological analysis, (i) immediate post-surgical radiograph, (j) 18-months follow-up radiograph, (k) 18-months follow-up CBCT scan (i) coronal section, (ii) axial section.

3. Discussion

Cementoblastoma is a slow-growing neoplasm that typically shows no signs of cortical bone loss. An infrequent symptom of this tumor may be pain. [2,7] There are no documented examples of cementoblastoma exhibiting paresthesia or anesthesia, in contrast to aggressive tumors. [7] Pulp sensibility tests typically yield a response from the damaged teeth. On radiographs, the lesion is typically shown as a single radio-opacity confluent with the tooth root(s) that is implicated. The lesion may have a thin radiolucent ring

surrounding it, giving it the appearance of a "sunburst" or "root trunk." [7]

Cementoblastoma, histopathologically exhibits foci of vascularization and connective tissue in the region of the periphery and a dense core region with birefringent material similar to that of bone with lines of reversal. [3,4] The current investigation clearly showed a comparable histological appearance. Cementoblastoma has been treated with a variety of suggested therapies. Following endodontic treatment, surgical excision of the cemental mass and a piece of the root, together with



apicoectomy, is advised. This strategy was used in the current investigation and has been shown to have favorable clinical outcomes and no recurrence.[8]

At a follow-up of ten months, Quadri *et al.* reported periapical healing without any symptoms or signs following an apicoectomy six months following endodontic treatment of the afflicted tooth.[9] These results supported the possibility of a more conservative cementoblastoma treatment plan that might save the damaged teeth.

Following apicectomy and lesion exeresis, the bone void in the current case study was filled with hydroxyapatite crystals along with PRF and then covered with a collagen membrane. Clinical experiments indicate that in addition to improving the handling characteristics of graft materials, graft stabilization, hemostasis, and encouraging wound healing, bone growth, and maturation, the combination of bone graft and the growth factors in the PRF may be appropriate to improve bone density.[10] By stopping epithelial migration, a collagen membrane was inserted to promote directed tissue regeneration and hasten the process of bone repair.[8] Lastly, an 18-month follow-up revealed no relapse in our case report.

4. Conclusion

This case report shows that conservative treatment that maintains the patient's oral function can salvage a tooth impacted by cementoblastoma. For an appropriate diagnosis, a thorough examination of the problem is required. The majority of authorities have always believed that there is very little chance of recurrence and that completion of removal is the factor most closely linked to recurrence. Extended lengths of follow-up are required to confirm recurrence.

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